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ABSTRACT

The report studies the effects that the achieved status of the principal (power figure) has on the productivity of a heierarchically differenitiated group (participants have unequal ascribed status relationships) when all of the group members have an equal share in making decisions. The study tests two hypotheses: (1) as leader achieved status increases, analytical productivity (understanding of the problem) of the group decreases, and (2) as leader achieved status increases, synthesis productivity (solving the problem) increases for those groups which have completed the analysis phase. An instrument was developed to measure teachers' perception of achieved status of the principal. 27 schools which had principals designated as having high, moderate and low achieved status, participated in the study. Each school had an experimental group consisting of the principal and three randomly selected teachers. These 27 groups were each allotted 40 minutes to work on a problem and group productivity was measured in both analytical and synthesis phases of problem solving. The study also lists the desirable behavior for the power figure to facilitate both analytical and synthesis productivity of many issues arising in today's schools requiring group solution. (author/MC)

The Effects of Leader Achieved Status on Hierarchically Differentiated Group Performance*

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Introduction

A number of decisions in today's schools are made by principals and teachers working on common problems in small group settings. Even when the final authority and responsibility to make the final decision rests with the principal, the judgment and advice of the teachers are often required in order to reach conclusions. This study looks at the effects that the achieved status of the principal (power figure) has on the productivity of a hierarchically differentiated group when all of the group members have an equal share in making decisions. A hierarchically differentiated group is one that is structured with participants who have unequal ascribed status relationships.

There are two kinds of status that all individuals possess. Getzels and Guba describe two dimensions of behavior that a leader may pursue in attempting to reach certain goals.[1] The first is the nomothetic dimension (role dimension) in which the leader has delegated status and exerts delegated authority over subordinates. The second is the idiographic dimension (person dimension) in which the leader has achieved prestige and exerts influence. Barnard also speaks of two different kinds of status systems in

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organizations.[2] He refers to one kind of status system as scalar, the formal relationship of superordinate and subordinate in a chain of command and the resulting power to influence behavior. Barnard's other system is functional status in which status does not depend on authority and jurisdiction but upon function. Lonsdale also refers to the status emanating from these two dimensions as ascribed and achieved status.[3] Ascribed status refers to the status assigned to an individual because of his position, regardless of his abilities or performance. Achieved status is that earned by the incumbent because of his special qualities and performance.

Blau and Scott have been concerned with hierarchically differentiated status (ascribed status) and its consequent dysfunctional effects on group decision making.[4] They have confined themselves to an intuitive examination of social conditions that appear to inhibit the normal group interaction processes which are peculiar to peer group functioning and the resulting consequences for performances. Bridges, Doyle and Mahan provided empirical support for Blau and Scott's hypothesis that there would be differences in the performance of hierarchically differentiated and undifferentiated groups, but also discovered that an inhibition of the normal group interaction processes took place in only twenty-two per cent of the groups with the power figure present.[5] These findings suggested that some other variable besides leader ascribed status was accounting for a sizable portion of the variation in the group interaction.

There is considerable literature suggesting that leader prestige and respect emanating from competence and expertise (i.e., achieved status) are quite influential in affecting the behavior of associates. However, prior

attempts at linking the behavior of group members to the productivity of the group have not been very successful.

Theory

The study was designed to test the following two hypotheses:

1. As leader achieved status increases, analytical productivity of the group decreases.

2. As leader achieved status increases, synthesis productivity increases for those groups which have completed the analysis phase.

It was expected that the social power of the hierarchical leaders would be enhanced as their achieved status accorded by subordinates increased. The disposition of their substantive ideas would become a function of the social power they held. Ideas of leaders with high achieved status would not elicit the same kind of rigorous examination as would ideas of leaders with low achieved status. Expectations of subordinates for contributions by the leader would be greater in groups with high achieved status leaders. Fewer ideas would be generated by subordinates for consideration by the group. The ideas that were generated and expressed by subordinates would also be overlooked more often in groups with leaders of high achieved status than in groups with leaders of low achieved status. As a consequence, the assembly effect bonus normally accruing to groups with high achieved status leaders would be attenuated. These social conditions hold dysfunctional consequences for analytical productivity.

It was also expected that power figures with high achieved status would tend to behave more like leaders; that is, they would assume greater responsibility for managing the group by recapitulating findings, focusing

group effort, and taking the lead on procedural matters. These social conditions in groups hold functional consequences for synthesis productivity provided that the analytical phase of the problem solving has been successful.

Methodology

Principals and teachers in elementary schools in three large suburban school districts were chosen as the subjects who were to constitute the power figures and subordinates respectively. An instrument was developed to measure the teachers' perception of the achieved status of the principal. Questionnaires from forty-five anonymous teachers gave estimates of their principals on a seven point achieved status continuum and also on fourteen specific principal behaviors. Multiple and step-wise regression techniques were used to determine which of the fourteen specific behavior were accounting for most of the variance in the earned status score of the principal. Eighty-six per cent of the variance was accounted for by four of the behavioral variables. A revised questionnaire containing only the statements describing specific behaviors of the principal was then sent to the faculties of thirty-five elementary schools that were to be used in examining the major question in the study.

A least-squares equation was used to compute the achieved status of the principal which took into account the weight that each of the four behavioral variables contributed to the achieved status score of the principal. A composite achieved status score for each principal was then computed by averaging the scores accorded him by the teachers in his school. Principals and teachers who had at least one year of experience were used. Twenty-seven individual schools participated in the final phase of the study.

These included nine schools which had principals of high achieved status, nine schools with principals of moderate achieved status and nine schools with principals of low achieved status.

Experimental groups consisting of the principal and three teachers were formed in each school. These three teachers were randomly selected from a pool in each school who: 1) had moderate achieved status among peers as perceived by peers and by the principal; and 2) had assigned an achieved status score to the principal comparable to the mean faculty rating of the principal on this measure.

After the members of the twenty-seven groups had been selected, an experiment was conducted under identical conditions.[6] Each group was allotted forty minutes to work on the problem but not apprised of the time at any point. All work sessions were tape recorded and a typescript of the problem solving session was made. An identical set of instructions was read to each experimental group. Individuals in the group could ask the experimenter questions at any point in the session. When any three of the four group members agreed among themselves that they had arrived at the correct solution to the problem, they could present it as a group to the experimenter. If the solution were wrong, the group could continue to work toward another solution. At the conclusion of the session, each participant received a post-session questionnaire asking for his reactions to the problem session. The questionnaire given to teachers also asked them to indicate their level of confidence prior to beginning on the problem regarding the principal's contributions to problem solution.

Group productivity was measured in both the analytical and synthesis phases of problem solving. The analytical phase of the problem solving task

is concerned with breaking down the problem and understanding its component parts. Analytical productivity was measured by combining the number of beliefs overcome by the group and the amount of time required to overcome these beliefs.[7] Synthesis productivity is that phase in this particular problem solving task that is concerned with organizing the new beliefs, integrating them into a new system, and coming up with the correct solution to the problem. Stated in operational terms, synthesis productivity is solving or not solving the problem.

Results

Hypothesis 1 states that as principal achieved status increases, group analytical productivity decreases. Mean group analytical productivity scores were computed for the nine groups in each of three categories of principal achieved status. Groups with low achieved status principals had a mean analytical productivity score of 3.15. Groups with moderate achieved status principals had 3.33, and groups with high achieved status principals had a mean score of 2.34. A one-way analysis of variance was used to test the null hypothesis. An F value of 6.86 was obtained with a .005 significance level on a one-tailed test. However, the null hypothesis cannot be rejected. The hypothesis as stated is based upon a linear model. A linear model will explain only ten per cent of the variance in the group analytical productivity scores while a nonlinear model will explain twenty-six per cent more. An analysis of variance test for nonlinearity shows that the relationship is, in fact, curvilinear. The Pearson product r, based upon a linear model, is .31 with .32 needed to attain the .05 significance level. However, the correlation coefficient (an e of .56) is a more accurate estimate of

the strength of the relationship.[8] The hypothesis was not confirmed; however, a significant nonlinear relationship was found to exist. Groups with low and moderate achieved status did not differ from each other, although groups with high achieved status principals were less productive in the analysis phase.

Hypothesis 2 proposes that as principal achieved status increases, more groups which have completed the analysis phase will solve the problem. Effective analysis must necessarily precede synthesis in this problem solving task. Therefore, only those twenty-one groups which had completed the analysis phase were included when synthesis productivity was examined. In the groups with low achieved status principals, none of the eight groups completing the analysis phase solved the problem. In the nine groups with moderate achieved status principals, sixty-seven per cent solved the problem. In the four groups completing the analysis phase which had high achieved status principals, seventy-five per cent solved the problem. The twelve groups which overcame all three beliefs had principals with a mean achieved status score of 4.91. The nine groups which overcame all three beliefs but also solved the problem had principals with a mean achieved status score of 6.16. The Pearson product moment correlational technique was used to test the null hypothesis that no differences existed between group synthesis productivity and the achieved status of principals in the groups. A Pearson product r of .63 was established which is significant at .005 on a one-tailed test. The hypothesis is supported.

Discussion

An analysis of the group dialogue that took place during the problem

solving session provides us with some reasonably good explanations of relationships that occurred. Groups with high achieved status leaders did not do as well in the analysis phase of problem solving as did groups with moderate or low achieved status leaders. Groups tend to perform analytical tasks more effectively than do individuals. However, the processes that ordinarily take place in groups and which promote more effective functioning in performing analytical tasks were distorted in groups with high leader achieved status. The survival and pursuit of high leader achieved status ideas was a function of the source of the thought. These leader ideas did not receive the same rigorous intellectual examination as did ideas of low or moderate achieved status leaders and subordinates. Consequently, poor or marginal ideas of leaders with greater achieved status were not corrected through challenge by subordinates but received social support without regard for the merit of the idea. Additionally, ideas of subordinates were ignored more often in groups with a leader of high achieved status than in groups with leaders of low or moderate achieved status. Finally, subordinate expectations for ideas from the leader that would help solve the problem were greatest in groups with high achieved status leaders. Fewer subordinate ideas were generated in these groups.

These findings became especially explicative when they are linked with group analytical productivity. Groups that did not achieve as well in analytical productivity:

1) Failed to criticize ideas of leaders but instead were inclined to provide a disproportionate amount of social support for them.

2) Ignored ideas of subordinates.

3) Expressed high level of confidence in the ability of the leader to present ideas that would help the group in its search for a correct solution.

On the other hand, once the analytical phase was completed, groups with high achieved status leaders solved the problem more often than did groups with moderate and low achieved status. Leaders of higher achieved status assumed the role of group leader. These leaders spent more time managing the group. They tended to make more management kinds of remarks. (A management remark is defined as a verbal statement which is nonsubstantive in nature and attempts to solidify the efforts of the group in some way.) Groups with leaders high in management behavior solved the problem more often than groups with leaders low in management behavior. Of course, successful problem analysis must have preceded.

Implications

The question of group productivity has significance for staff-administrator relationships in many educational contexts. Among these might be meetings of the curriculum council, textbook or resource committees, the salary committee, the policy committee, departmental committees, general staff meetings and general teacher-principal interaction in the day to day operation of the school. Many of the issues arising in today's schools require group solutions.

The findings of this study provide valuable insight into the role that the power figure needs to play in the group in order to facilitate analytical productivity. The following behavior for the power figure is suggested:

1) The power figure should delay expressing an opinion until the full resources of the group have been brought to bear on the issue under consideration.

2) The power figure should be more occupied with eliciting ideas from subordinates than in generating ideas himself. His own ideas may or may not be scrutinized as closely.

3) The power figure should make every effort to develop a contingent relationship with group members. The probability that his solicitations will be perceived as genuine by group members will thereby be enhanced.

4) The power figure should try to promote an atmosphere that will enable all ideas to be subjected to group examination. Ideas of group subordinates that have merit may otherwise be overlooked.

The power figure also has an equally important role to perform when the problem becomes one primarily of coordination. Synthesis productivity is facilitated when the power figure behaves as suggested:[9]

1) The power figure should lead the group rather than try to solve the problem himself.

2) The power figure should attempt to focus the energy of the group on a plan for attacking the problem.

3) The power figure should take the responsibility for clarifying procedural matters.

4) The power figure should take the initiative in recapitulating what the group has previously established.

5) The power figure should take the responsibility for probing group members to determine willingness to submit a solution under discussion.

In summary, productivity of groups with unequal ascribed status relationships will be greatest in those groups where a marriage is effected between the social conditions conducive to analytical productivity and those social conditions conducive to synthesis productivity.

[1]Jacob W. Getzels and Egon G. Guba, "Social Behavior and the Administrative Process," The School Review, LXV (December, 1957), 423-441.

[2]Chester I. Barnard, "Functions of Status Systems," in Industry and Society, ed. by William F. White. New York: McGraw-Hill, 1946.

[3]Richard C. Lonsdale, "Maintaining Dynamic Equilibrium," Behavioral Science and Administration, Sixty-third Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1964, 142-177.

[4]Peter M. Blau and W. Richard Scott, Formal Organizations. San Francisco: Chandler, 1963.

[5]Edwin M. Bridges, Wayne J. Doyle and David J. Mahan, "Effects of Hierarchical Differentiation on Group Productivity, Efficiency, and Risk Taking," Administrative Science Quarterly, XIII (September, 1968), 305-319.

[6]The task was to work toward a solution to the Joe Doodlebug Problem, a problem devised by M. Ray Denny in 1945 and reported in Milton Rokeach, The Open and Closed Mind. New York: Basic Books, 1960. It is a problem in logic involving an imaginary insect who operates in an environment under unusual governing circumstances. It is a non-school related problem and was chosen for this experiment for two reasons: 1) to insure against any familiarity with the problem and 2) to maintain as an emotionally free climate as possible.

[7]In the "Joe Doodlebug Problem" the subject is given the end result (that Joe must jump four times to reach his food) and is asked to tell why Joe reaches the conclusion he does. In order to reach a correct solution the subject must overcome three basic beliefs. In everyday life we face the food we are about to eat, but Joe need not face his food in order to eat it. He can land on top of it (the facing belief). In everyday life we can change our direction at will. Joe, however, can change direction only by jumping sideways or backwards (the direction belief). In everyday life we can change direction immediately, but Joe must make four jumps in one direction before he changes. Subjects have difficulty with this belief because they assume that Joe is at the end rather than possibly in the middle of a sequence (the movement belief).

[8]The e value of .56 is the corrected Eta of .60.

[9]These findings are in basic agreement with the work of Norman R.F. Maier, "The Quality of Group Decisions as Influenced by the Discussion Leader," Human Relations, III, (1950), 155-174; and Norman R.F. Maier and Allen R. Solem, "The Contribution of Discussion Leader to the Quality of Group Decision Making: the Effective Use of Minority Opinions," Human Relations, V, (August, 1953) 277-288.